

# Guide for Acoustic Identification of Florida bats

## Family:

Molossidae

## Database species code

Eumflo or Euf1

See glossary for explanation of codes

## Scientific name

*Eumops floridanus* (G. M. Allen, 1932)

Taxonomy follows Simmons and Cirranello (2021)

## Call shape

To view call graphics click on the camera icon on the right. You can then move through all images by using the left or right arrow keys. A left mouse click returns to the fact sheet.



Search phase calls are single QCF pulses decreasing in frequency. A wide range of example call shapes and types are provided

This should be a species that is easy to confirm acoustically by evaluating complete call sequences. While the 90th percentile of calls range around 16 kHz, it is the only bat regularly emitting search phase calls below 15 kHz.

However, those without experience in identifying calls of all species occurring in Florida may confuse commute calls of *Taderida brasiliensis*, *Lasiurus cinereus* or social calls of *Nycticeius humeralis* with calls of *E. floridanus*. This may result in false positive identification. Several examples are included for comparison. Auto identification algorithms may also flag these calls as Eumflo incorrectly.

Hand release calls are considerably higher in frequency than free flying search phase calls. Clutter calls recorded at roosts and feeding buzzes are also considerably higher in frequency than free flying diagnostic search phase calls. These higher range of frequencies from such recordings are not useful as reference calls as they may be confused the other free flying species. Note: The various auto-ID algorithms often incorrectly flag such pulses as those of other species..

## Vocal signature parameters

Search phase calls

Parameters	N	Min	Max	Mean	St.Dev	10%	25%	75%	90%
Dur	1110	5.0	22.0	10.8	3.4	6.2	8.2	13.1	15.7
TBC	984	62.6	14653.9	805.6	917.1	390.5	474.7	741.0	1331.6
Fmin	1110	10.2	19.2	14.1	1.3	12.7	13.2	14.8	15.9
Fmax	1110	12.6	25.3	17.2	2.0	15.1	15.9	18.5	19.8
BW	1110	0.8	8.7	3.1	1.1	1.8	2.3	3.8	4.7
Fmean	1110	12.1	21.0	15.3	1.5	13.7	14.2	16.1	17.3
Fk	1110	12.6	21.8	16.2	1.6	14.4	15.0	17.2	18.4
FcH1	1110	5.9	9.9	7.4	0.7	6.6	6.8	7.8	8.4
Fc	1110	11.9	19.9	14.7	1.4	13.1	13.7	15.5	16.7
FcH3	1110	17.8	29.8	22.1	2.1	19.7	20.5	23.3	25.1
Sc	1110	-47.2	117.6	23.1	9.8	12.9	18.3	27.4	32.9
Pmc	1110	1.0	30.9	16.9	6.7	8.1	11.9	22.0	26.7

Feeding buzz

Parameters	N	Min	Max	Mean	St.Dev	10%	25%	75%	90%
Dur	1110	5.0	22.0	10.8	3.4	6.2	8.2	13.1	15.7
TBC	984	62.6	14653.9	805.6	917.1	390.5	474.7	741.0	1331.6
Fmin	1110	10.2	19.2	14.1	1.3	12.7	13.2	14.8	15.9
Fmax	1110	12.6	25.3	17.2	2.0	15.1	15.9	18.5	19.8
BW	1110	0.8	8.7	3.1	1.1	1.8	2.3	3.8	4.7
Fmean	1110	12.1	21.0	15.3	1.5	13.7			

**Parameters** N Min Max Mean St.Dev 10% 25% 75% 90%

Dur	251	0.8	44.5	8.9	6.5	2.0	4.9	11.0	14.9
TBC	236	1.7	2874	428	429	44	181	491	759
Fmin	251	10.0	20.9	15.0	1.6	13.2	14.0	15.9	17.1
Fmax	251	14.6	29.8	19.6	3.1	16.4	17.5	20.7	23.9
BW	251	0.3	15.7	4.6	3.1	1.4	2.4	5.7	8.8
Fmean	251	14.5	22.1	16.7	1.5	14.9	15.5	17.6	18.4
Fk	251	10.0	21.9	17.3	1.7	15.7	16.3	18.2	19.7
Fc	251	14.0	22.4	16.1	1.5	14.5	15.0	16.9	18.1
Sc	251	-610.4	356.5	23.5	79.5	9.0	20.9	39.0	62.8
Pmc	251	0.0	81.4	22.2	17.2	3.7	10.5	29.6	41.1

### Source of acoustic data

Cynthia and George Marks

Bruce Miller

Reference calls recorded by Marks and Miller are being archived at BioAcoustica and will be freely available. See Baker et al., (2015).

### Known counties of distribution

- Broward
- Charlotte
- Collier
- Hendry
- Highlands
- Lee
- Miami-Dade
- Monroe
- Polk

### Conservation status

Florida Fish and Wildlife Conservation Commission (2018)

Federal Status: Endangered

FL Status: Federally-designated Endangered

FNAI Ranks: G5T1/S1 (Globally: Demonstrably Secure, Sub Sp. Critically Imperiled/State: Critically Imperiled)

IUCN Status: Vulnerable C2a(i)- population trend decreasing I.U.C.N. (2018)

The Florida bonneted bat is protected as an Endangered species by the Federal Endangered Species Act and as a Federally-designated Endangered species by Florida's Endangered and Threatened Species Rule.

See FWC (2018)

### Notes

See Bailey et al., (2017) for predicted distributions and Baker et. al., (2015) for discussion of BioAcoustica and Baker and Vincent (2019) for a critique of the lack of freely available acoustic data.

### Citations

Bailey, A. M., H. K. Ober, A. R. Sovie, and R. A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. *Journal of Mammalogy*. 98: 1586-1593.

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Marks, C. S., and G. E. Marks. 2006. Bats of Florida. Pp. 176. University of Florida Press, Gainesville.

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